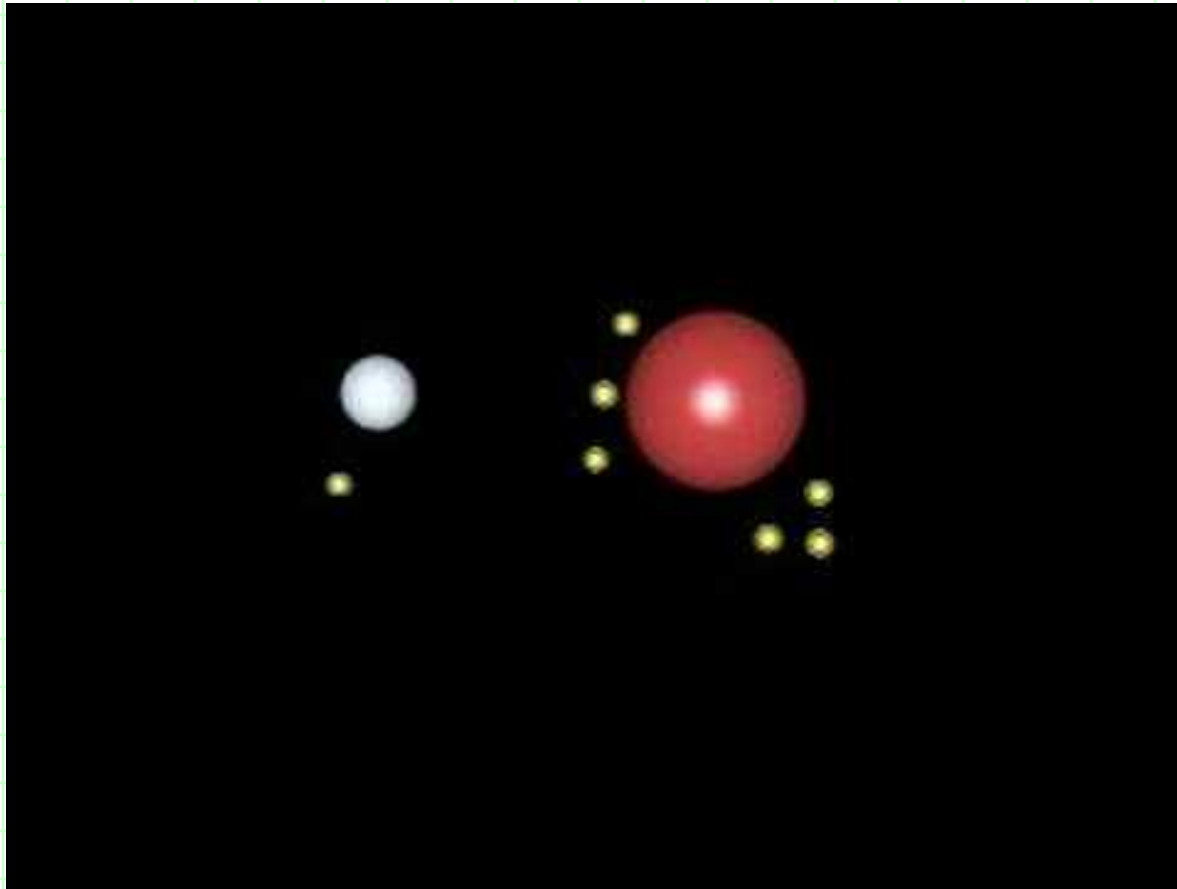


The Periodic Table and Bonding



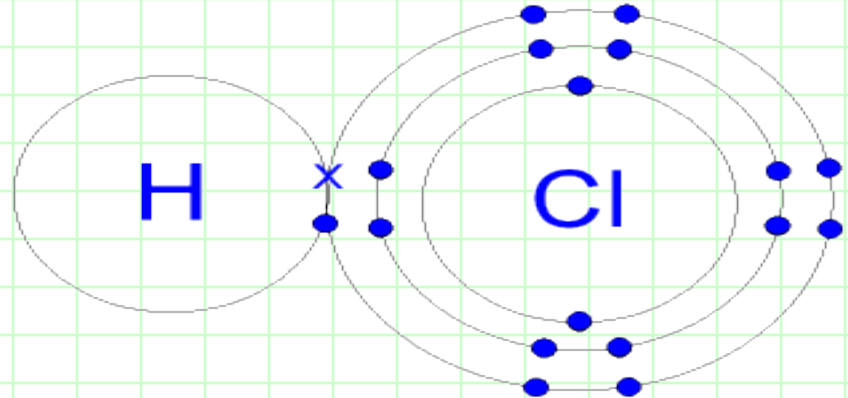
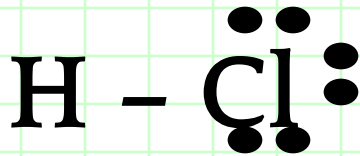
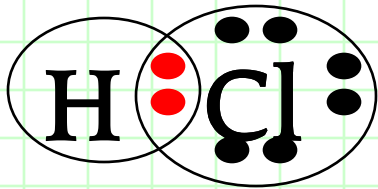
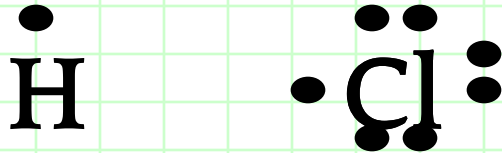
49/

Ionic-and-covalent-bonding-animation

The Periodic Table and Bonding

Covalent Bonding : The bonding of a non – metal and non – metal

1. Atoms valence electrons.



The Periodic Table and Bonding

F

F

H

H



The Periodic Table and Bonding

H O H

N N



The Periodic Table and Bonding

H

H

C

C

H

H

Naming Covalent Compounds:

Rules:

1. Name the element farthest to the LEFT on the periodic table first.
2. If two elements are in the same group, name the LOWER one first.
3. The second element's ending is changed to -ide.
4. Greek prefixes are used to indicate the # of atoms of each element.

| | | | | |
|----------|-----------|-----------|-----------|-----------|
| 1. mono- | 3. tri- | 5. penta- | 7. hepta- | 9. nona- |
| 2. di- | 4. tetra- | 6. hexa- | 8. octa- | 10. deca- |

5. The prefix mono- is NEVER used with the first element.
6. When the element begins with a vowel, drop the -a or -o from the ending of the prefix.
7. Compounds only containing MORE THAN ONE OF THE SAME element, they are given their own name (name does not change)

ex. P_4S_{10} tetraphosphorus decasulfide

Ex. NF_3 nitrogen trifluoride

Ex. N_2O_4 dinitrogen tetroxide

Ex. O_2 oxygen

$\text{BrCl} =$ _____

$\text{N}_2 =$ _____

$\text{H}_2\text{O}_2 =$ _____

$\text{CCl}_4 =$ _____

$\text{CBr}_4 =$ _____

$\text{NF}_3 =$ _____

$\text{H}_3\text{N} =$ _____

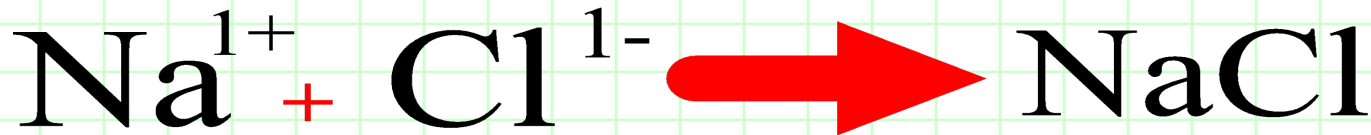
$\text{H}_2\text{O} =$ _____

The Periodic Table and Bonding

D. Chemical Reactions result from bonded ions

1. 5 most common reactions

a. Synthesis Reaction



+

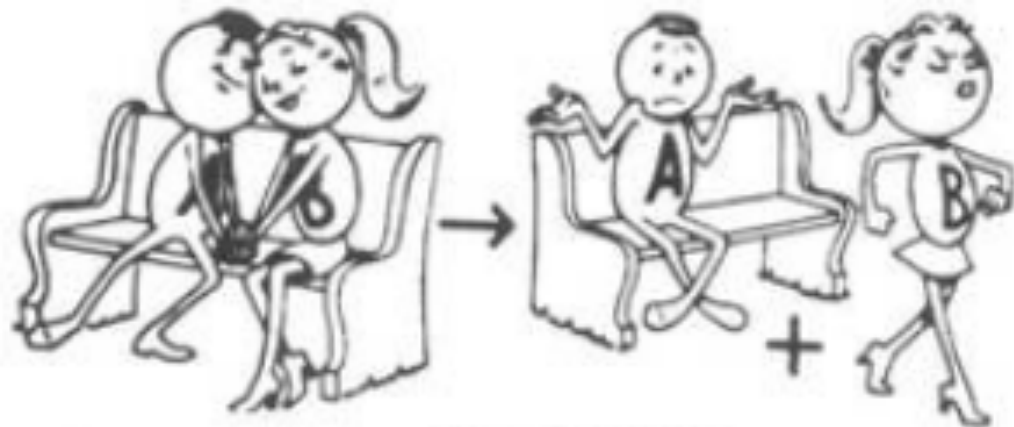
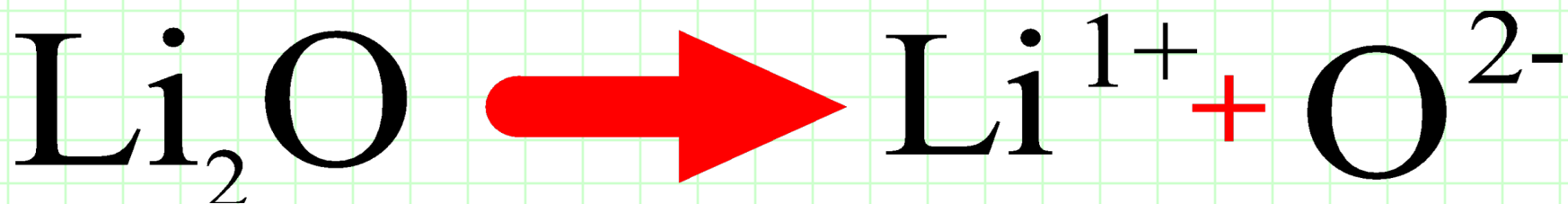


=



The Periodic Table and Bonding

b. Decomposition Reaction



Decomposition.

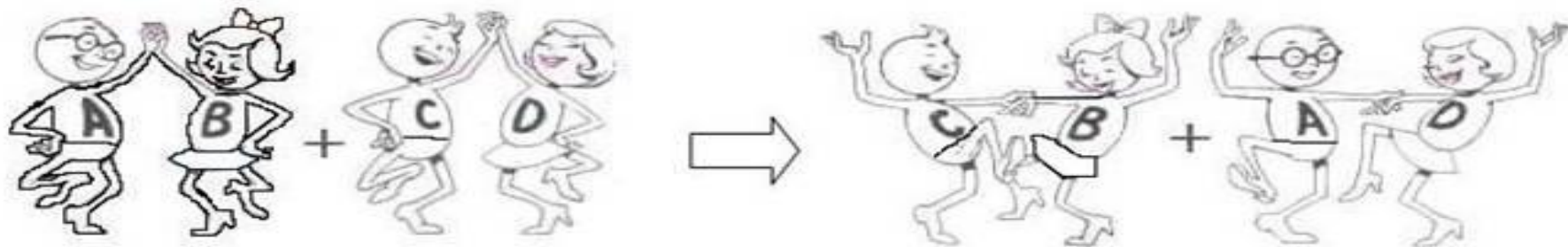
The Periodic Table and Bonding

c. Single - Replacement Reaction



The Periodic Table and Bonding

d. Double - Replacement Reaction



The Periodic Table and Bonding

e. **Combustion Reaction**



The Periodic Table and Bonding

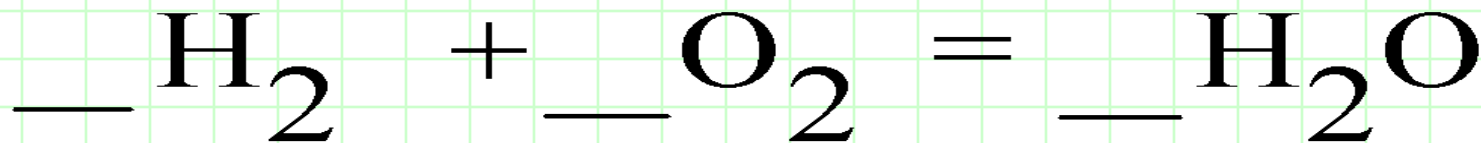
Chemical Equations must be balanced
due to the conservation of mass.

MATTER CANNOT BE _____
or _____ only rearranged!!!

The Periodic Table and Bonding

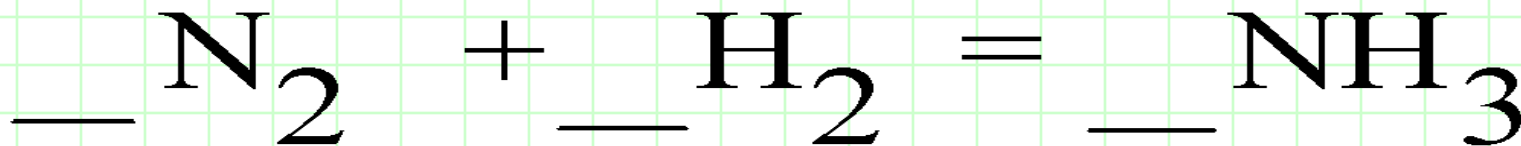
Balancing Equations!!!

YOU ONLY HAVE POWER TO CHANGE A COEFFICIENT!!



The Periodic Table and Bonding

BALANCING EQUATIONS PRACTICE!



Reactants

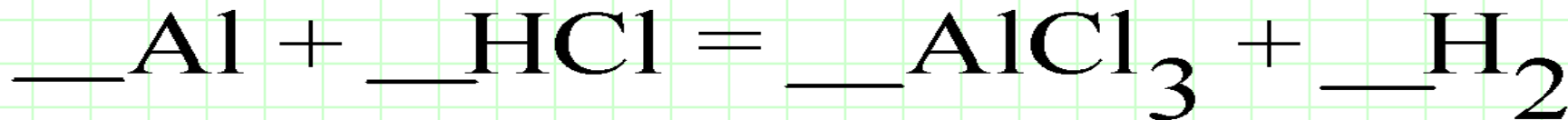
N =

H =

Products

N =

H =



Reactants

Al =

H =

Cl =

Products

Al =

H =

Cl =